

PCT  
ASSIGNMENT

We,

- (1) Keisuke Kuida; and  
(2) Richard A. Flavell

residing, respectively, at

- (1) 1903 Stearns Hill Road, Waltham,  
Massachusetts 02451 U.S.A.; and  
(2) 283 Moose Hill Road, Guilford  
Connecticut 06437, U.S.A.;

for good and valuable consideration, receipt of which is hereby acknowledged, have assigned, sold and transferred to, and do hereby assign, sell and transfer to each of: VERTEX PHARMACEUTICALS INCORPORATED a corporation organized and existing under the laws of the COMMONWEALTH OF MASSACHUSETTS and having an office and a place of business at 130 WAVERLY STREET, CAMBRIDGE, MASSACHUSETTS 02139-4242, its successors and assigns and YALE UNIVERSITY, a corporation by charter granted by the General Assembly of the COLONY AND STATE OF CONNECTICUT and having an address at 451 College Street, New Haven, Connecticut 06520, USA, its successors and assigns: (1) an equal and undivided share in the entire right, title and interest in all countries throughout the world in and to any and all our inventions and discoveries disclosed in our International Patent Application, filed under the Patent Cooperation Treaty in the United States Receiving Office (RO/US), entitled: "CASPASE-9 DEFICIENT ANIMALS AND THE USE THEREOF"

09756173-120100

00726173 120100

and designating Albania (AL), Armenia (AM), Australia (AU), Austria (AT), Azerbaijan (AZ), Barbados (BB), Belarus (BY), Belgium (BE), Benin (BJ), Bosnia and Herzegovina (BA), Brazil (BR), Bulgaria (BG), Burkina Faso (BF), Cameroon (CM), Canada (CA), Central African Republic (CF), Chad (TD), China (CN), Congo (CG), Côte d'Ivoire (CI), Croatia (HR), Cuba (CU), Cyprus (CY), Czech Republic (CZ), Democratic People's Republic of Korea (KP), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Gabon (GA), Gambia (GM), Georgia (GE), Germany (DE), Ghana (GH), Grenada (GD), Greece (GR), Guinea (GN), Guinea-Bissau (GW), Hungary (HU), Iceland (IS), India (IN), Indonesia (ID), Ireland (IE), Israel (IL), Italy (IT), Japan (JP), Kazakhstan (KZ), Kenya (KE), Kyrgyzstan (KG), Latvia (LV), Lesotho (LS), Liberia (LR), Liechtenstein (LI), Lithuania (LT), Luxembourg (LU), Madagascar (MG), former Yugoslav Republic of Macedonia (MK), Malawi (MW), Mali (ML), Mauritania (MR), Mexico (MX), Monaco (MC), Mongolia (MN), Netherlands (NL), New Zealand (NZ), Niger (NE), Norway (NO), Poland (PL), Portugal (PT), Republic of Korea (KR), Republic of Moldova (MD), Romania (RO), Russian Federation (RU), Saint Lucia (LC), Senegal (SN), Sierra Leone (SL), Singapore (SG), Slovakia (SK), Slovenia (SI), South Africa (ZA), Spain (ES), Sri Lanka (LK), Sudan (SD), Swaziland (SZ), Sweden (SE), Switzerland (CH), Tajikistan (TJ), Togo (TG), Trinidad and Tobago (TT), Turkey (TR), Turkmenistan (TM), Uganda (UG), Ukraine (UA), United Arab Emirates (AE), United Kingdom (GB), United States of America (US), Uzbekistan (UZ), Viet Nam (VN), Yugoslavia (YU), and Zimbabwe (ZW), [subsequently identified as International Patent Application

09728173:120100

\_\_\_\_\_, filed \_\_\_\_\_\*], including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof, and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of VERTEX PHARMACEUTICALS INCORPORATED and YALE UNIVERSITY, their designees, or in our names at VERTEX PHARMACEUTICALS INCORPORATED and YALE UNIVERSITY, or their designees' election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) an equal and undivided share in the entire right, title and interest in and to any Letters Patent which may issue on the aforesaid inventions, discoveries and applications in any country of the world and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) an equal and undivided share in the entire right, title and interest in and to all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the following priority application(s):

60/087,711  
application no.

U.S.A.  
country

2 June 1998  
filing date

\* We hereby authorize Vertex Pharmaceuticals Incorporated and its representatives to insert in this instrument the International Patent Application number and the filing date of said application when Vertex Pharmaceuticals Incorporated is officially notified thereof.

and all rights of priority in any country of the world deriving from the above-identified International Patent Application.

We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in any country throughout the world to VERTEX PHARMACEUTICALS INCORPORATED and YALE UNIVERSITY as the assignees of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, sale and transfer not been made.

We agree, at any time, upon the request of VERTEX PHARMACEUTICALS INCORPORATED and/or YALE UNIVERSITY to execute and to deliver to VERTEX PHARMACEUTICALS INCORPORATED and/or YALE UNIVERSITY any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries or applications, and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.

We further agree, at any time, upon request of VERTEX PHARMACEUTICALS INCORPORATED and/or YALE UNIVERSITY to execute and to deliver to VERTEX PHARMACEUTICALS INCORPORATED and/or YALE UNIVERSITY such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect any and all rights of VERTEX PHARMACEUTICALS INCORPORATED and YALE UNIVERSITY under this Assignment, including the execution, delivery and procurement of any

and all further documents evidencing this assignment,  
transfer and sale as may be necessary or desirable.

ASSIGNORS:

Keisuke Kuida (1)  
Keisuke Kuida  
Richard A. Flavell (2)  
Richard A. Flavell

On this 8<sup>th</sup> day of June, 1999,  
(1) Keisuke Kuida personally appeared before me, a Notary  
Public in and for the Commonwealth of Massachusetts, and  
executed the foregoing Assignment and duly acknowledged to  
me that such Assignment was executed for the uses and  
purposes therein expressed.

Phyllis A. Tobey  
Notary Public

PHYLLIS A. TOBEY  
Notary Public  
My Commission Expires May 8, 2003

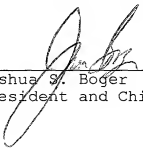
On this 9<sup>th</sup> day of JUNE, 1999,  
(2) Richard A. Flavell personally appeared before me, a  
Notary Public in and for the STATE OF CONNECTICUT, and  
executed the foregoing Assignment and duly acknowledged to  
me that such Assignment was executed for the uses and  
purposes therein expressed.

JANET M. BUDZINACK  
Notary Public  
JANET M. BUDZINACK

My Commission Expires September 30, 1999

ACKNOWLEDGMENT OF ASSIGNEES:

Vertex Pharmaceuticals Incorporated

By:   
Joshua S. Boger  
President and Chief Executive Officer

On this 27<sup>th</sup> day of July, 1999,  
Joshua S. Boger personally appeared before me, a Notary  
Public in and for the Commonwealth of Massachusetts, and  
duly acknowledged the executed Assignment on behalf of the  
Assignee.


  
Notary Public

Yale University

**CHARLES A. TOBEY**

Notary Public

My Commission Expires May 8, 2003

By:   
Dorothy Robinson  
Vice President and General Counsel

On this 4<sup>th</sup> day of August, 1999  
Dorothy Robinson personally appeared before me, a Notary  
Public in and for the State of Connecticut, and  
duly acknowledged the executed Assignment on behalf of the  
Assignee.

  
Notary Public

**NANCY J.P. SALIT**  
NOTARY PUBLIC  
MY COMMISSION EXPIRES FEB. 28, 2002